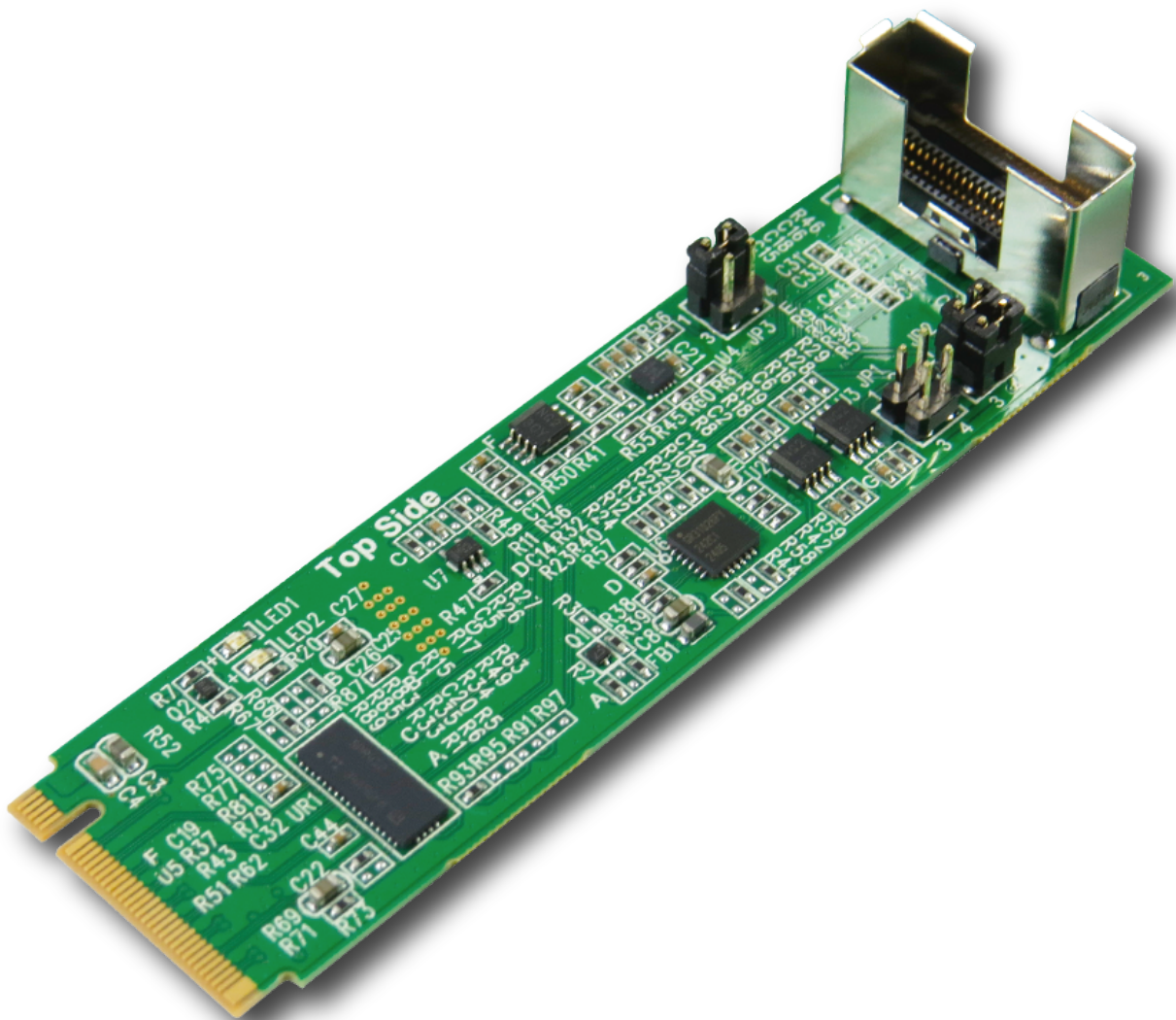




# Minerva

## EP4904

M.2 M-key *PCIe 5.0* with ReDriver to ARF6-16



# M.2 M-key **PCIe 5.0** with ReDriver to ARF6-16

## Features

- ※ Built- in 3.3V, 3A Load Switch with Reverse Current Protection and Controlled Turn-On
- ※ ARF6-16 to M.2 PCIe 5.0 convert
- ※ Built- in ARF6-16 connector with 30u"(0.76um) min Au mating area plating
- ※ Built- in ReDriver to extend PCIe 5.0, 32GT/s differential pair signals & provides equalization up to 24 dB at 16 GHz
- ※ Built- in PCIe 100MHz Clock buffer to drive longer trace lengths and longer cable
- ※ Built- in SMBus repeater and Voltage level shift with Hot swappable level translating
- ※ Built- in PERST# Voltage-Level Translator
- ※ The WAKE# Auto-Bidirectional Multi-Voltage Level Translator
- ※ The CLKREQ# Auto-Bidirectional Multi-Voltage Level Translator
- ※ LED1 Red from ON to OFF indicates PERST# signals normal
- ※ LED2 Green ON indicates 3.3V ready

## Specifications

- ※ PCI Express Base Specification Rev 5.0
- ※ PCIe\_CEM\_R5.1\_V1.0\_08072023\_NCB
- ※ PCI\_Express\_M.2\_Spec\_Rev5.1

## Compatible cables list:

Samtec AcceleRate Slim Cable Assembly, 0.635 mm Pitch Verified cable length:

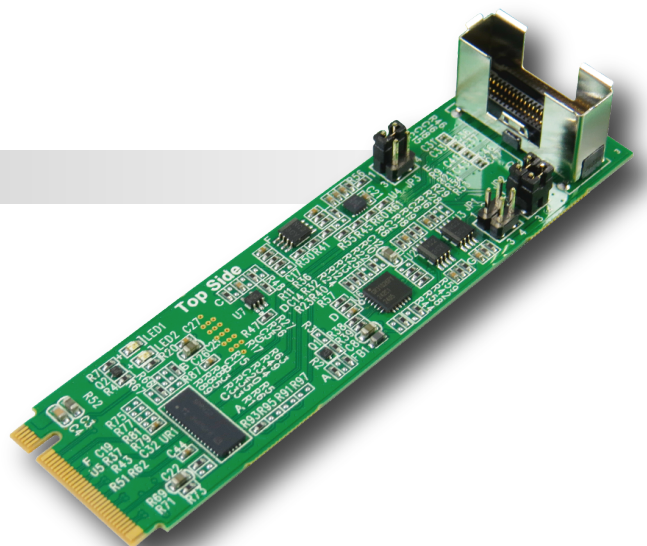
- ※ ARC6-16-20.0-LU-LD-2-1, 50cm
- ※ ARC6-16-40.0-LU-LD-2-1, 100cm

## Operating system support

- ※ Windows 8 & 8.1
- ※ Windows 10
- ※ Windows 11
- ※ UEFI 2.3.1 or later

## Applications

- ※ Rack server
- ※ Microserver and Tower server
- ※ High performance computing
- ※ Hardware accelerator
- ※ Storage Controller HBA(Host Bus Adapter)
- ※ Desktop PC/motherboard
- ※ FPGA Development Kit

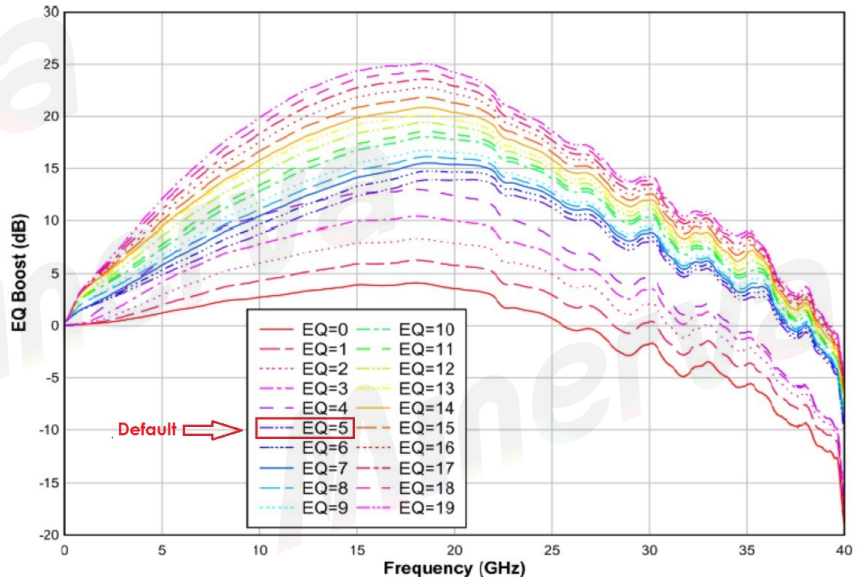


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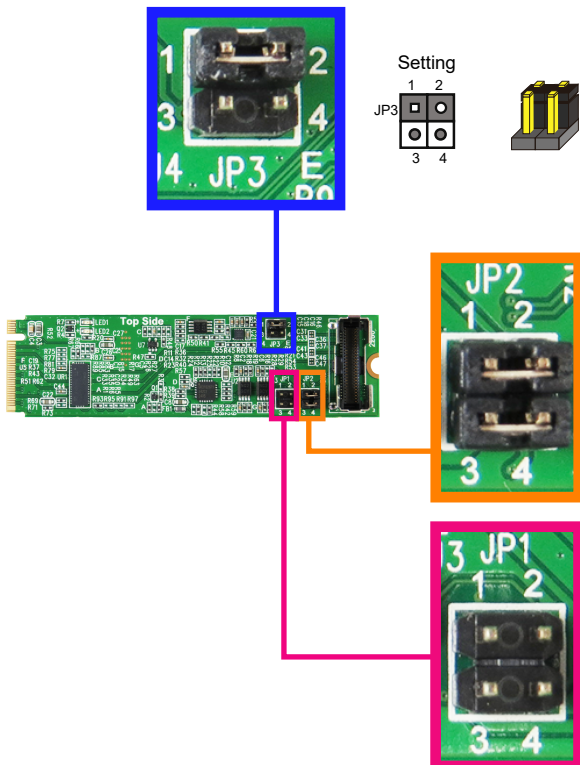
EP4904 AIC built-in ReDriver EQ Boost(dB) vs Frequency as below:

Equalization Control Settings				
EQ INDEX	EQUALIZATION SETTING		TYPICAL EQ BOOST (dB)	
	EQ0	EQ1	At 8 GHz	At 16 GHz
0	L0	L0	2.0	4.0
1	L1	L0	4.0	6.0
2	L2	L0	5.0	8.0
3	L3	L0	7.0	10.0
4	L4	L0	8	12
5	L0	L1	7.0	12.0
6	L1	L1	7.5	13.0
7	L2	L1	8.0	14.0
8	L3	L1	9.0	15.0
9	L4	L1	10.0	15.5
10	L0	L2	10.5	16.0
11	L1	L2	11.0	17.0
12	L2	L2	12.0	17.5
13	L3	L2	12.5	18.5
14	L4	L2	13.0	19.0
15	L0	L3	14.0	20.0
16	L1	L3	15.0	21.0
17	L2	L3	16.0	22.0
18	L3	L3	16.5	23.0
19	L4	L3	17.0	24.0

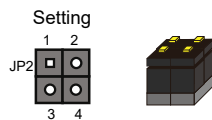
Default



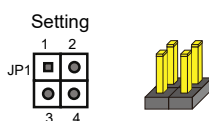
These jumpers setting of EP4904 are as below



JP3 SETUP			
1-2	ON	PCIE PERST#, WAKE#, CLKREQ# voltage level is 3.3V from M.2 to ARF6-16	Default setup
3-4	ON	PCIE PERST#, WAKE#, CLKREQ# voltage level is from M.2 3.3V to ARF6-16 1.2V	



JP2 SETUP			
1-2	ON	SMBus voltage level is 1.8V from M.2	Default setup
3-4	ON	SMBus voltage level is 3.3V to ARF6-16	Default setup



JP1 SETUP		
1-2	ON	SMBus voltage level is 1.8V from M.2
3-4	ON	SMBus voltage level is 1.2V to ARF6-16

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